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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,858	01/19/2004	Tzueng-Yau Lin	MTKP0044USA	1857
27765	7590	02/20/2008		
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			EXAMINER SAUNDERS JR, JOSEPH	
			ART UNIT	PAPER NUMBER
			2615	
			NOTIFICATION DATE	DELIVERY MODE
			02/20/2008	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	Application No. 10/707,858	Applicant(s) LIN, TZUENG-YAU	
	Examiner Joseph Saunders	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 6-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Allowable Subject Matter*

1. The indicated allowability of claims 6 – 10 is withdrawn in view of the newly discovered reference(s) to Kawai et al. (US 6,363,514). Rejections based on the newly cited reference(s) follow.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Steenbrugge (6,076,062), hereinafter Van Steenbrugge in view of Kawai et al. (US 6,363,514), hereinafter Kawai, and Fujishita (US 6,988,013), hereinafter Fujishita.

**Claim 6:** Van Steenbrugge discloses an audio processing circuit (Figure 6) for receiving a first stream complying with a first standard (MPEG) and generating a second stream complying with a second standard which is a digital interface standard (IEC958) (Column 2 Lines 2 – 7), the first stream includes a plurality of frames, each of the frames includes a plurality of fields (Figures 4A – D), the plurality of fields include a sync word field (Pa, Pb sync words), the audio processing circuit comprises: a stream buffer for storing the frames of the first

stream ("FIFO 28 is provided that by way of example accommodates 8 k Bytes as generally required for intermediate storage of MPEG data," Column 5 Lines 33 – 35); a stream recovering circuit (TDA1315, Figure 10) electrically connected to the stream buffer for receiving expected positions of the sync words derived from the first stream (TDA1315 uses timing information, from timing control block 96, based on the sync words Pa, Pb in order to maintain synchronization of the parsed frames necessary for positioning the PAUSE burst for transfer, Column 4 Lines 55 – 58 and Column 7 Lines 49 – 52), modifying the frames according to the actual positions of the sync word fields, and generating modified frames ("If in block 122 an Audio bitstream is detected, in block 1126 it is detected whether a Gap occurs. If "Gap", in block 120 a PAUSE data burst is sent," Column 8 Lines 10 – 12); a first buffer electrically connected to the stream recovering circuit for storing the modified frames; a burst circuit electrically connected to the first buffer for partitioning the modified frames into a plurality of payload sections, adding a preamble to each of the payload sections, and forming the second stream (TD1315 packages the burst payloads as user data in IEC958 format frames including a burst\_preamble and a payload and therefore since the signal is a "burst" of data the first buffer is included and electrically connected within the recovering circuit for storing the modified frames before transmission, Column 8 Lines 45 – 57).

Van Steenbrugge is silent to the possibility of errors in occurring in the MPEG stream and therefore does not disclose determining if the expected positions of the sync words are correct, repeatedly increasing the expected

positions by one positions when the expected positions of the sync word are not correct, locating actual positions of the sync word fields.

Kawai however discloses that a common problem in a sound reproducing system is that during audio decoding a synchronization error, especially in the case of audio encoded in a method without an error check, can cause an interruption of sound. Kawai further explains that this type of problem is common to some types of MPEG audio streams since they do not provide for an error check (Abstract and Background of the Invention). Kawai goes on to teach that in order to eliminate synchronization problems to first detect the initial syncword by searching for it ST1, but then instead of relying on a constant repetition of syncwords as in Prior Art Figure 13, to constantly check the validity of the bit stream ST3 and CRC ST4 if it exists. In this manner the bit stream information can be used to detect the subsequent syncwords since the bit stream information contains the expected position. Further, a check is performed as to whether a sync error has occurred by determining if the syncword is detected using the bit stream information ST21 and if the syncword is not detected a search is performed to find the syncword ST41 in a range before and after the expected position of the syncword to enable correction of the sync error (Figures 11 and 12). Kawai is silent <sup>as</sup> to how to perform the search but Fujishita discloses a method <sup>as</sup> for a MPEG stream by searching for continuous zeros and advancing through the stream one sample at a time until the burst sync which is represented by the continuous zeros is found (Column 7 Line 56 - Column 8 Line 12). Therefore given the technique disclosed by Kawai and Fujishita of determining if the

syncword is at the expected position and if not searching for it to prevent signal interruption, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Kawai and Fujishita in the system of Van Steenbrugge so that errors in an MPEG bit stream do not propagate in the system of Van Steenbrugge during repacking of the MPEG bit stream into IEC958 format, the error resulting in unpleasant sounds interruption when played back (Kawai, Abstract)

**Claim 7:** Van Steenbrugge, Kawai, and Fujishita and Van Steenbrugge further discloses the audio processing circuit of claim 6 wherein the second standard is S/PDIF standard (IEC958).

**Claim 8:** Van Steenbrugge, Kawai, and Fujishita and Van Steenbrugge further discloses the audio processing circuit of claim 6 wherein the first stream is retrieved from an optical storage disk (DVD player).

**Claim 9:** Van Steenbrugge, Kawai, and Fujishita and Van Steenbrugge further discloses the audio processing circuit of claim 6 further comprising: a decoding circuit (MC decoder) electrically connected to the stream buffer (FIFO 28) for decoding the frames retrieved from the stream buffer; a second buffer electrically connected to the decoding circuit for storing decoded frames generated by the decoding circuit (Intermediate buffer 58, Figure 7). Van Steenbrugge and Kawai *do not disclose* a digital to analog converter electrically connected to the second

buffer for converting the decoded frames received from the second buffer to analog signals however Fujishita discloses a DVD player with circuitry to decode an MPEG audio stream and output multi-channel audio. It would have been obvious to one of ordinary skill in the art at the time of the invention to also include the aspect of the D/A converter as disclosed by Fujishita in the previously combined system of Van Steenbrugge, Kawai, and Fujishita after the decoder to allow for output of the multi-channel decoded signal to be converted into an analog signal, amplified, and sent to the appropriate speaker to output sound (Fujishita, Column 4 Lines 8 – Column 5 Line 13).

4. Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Steenbrugge, Kawai, and Fujishita in view of Matsuura et al. (US 2002/0181600), hereinafter Matsuura.

**Claim 10:** Van Steenbrugge, Kawai, and Fujishita disclose the audio processing circuit of claim 6 but do not disclose wherein a decoding circuit and the stream recovering circuit are integrated into an audio processor of the audio processing circuit. Matsuura discloses a method for converting a data stream of a first format possibly containing an error in to a correct data stream of a second format.

Matsuura shows a TS separator that decodes or parses the mpeg stream similar to block 90 of Van Steenbrugge and Matsuura further discloses an error detecting and correcting unit that repackages the signal similar to block 32 Van Steenbrugge. Matsuura further shows both the separator and the error detecting

and correcting unit being integrated into an audio processor (Figure 5 of Matsuura and Figure 10 of Van Steenbrugge). It would have been obvious to one of ordinary skill in the art at the time of the invention to integrate the blocks 90 and 98 in the combined system of Van Steenbrugge, Kawai, and Fujishita since having the decoder and error detecting and correcting integrated into an audio processor as disclosed by Matsuura eliminates the possibility of an error being passed on to a unit, similar to block 90, responsible for repackaging the stream into a second format and as a result a more accurate stream is obtained (Matsuura, Paragraphs 131 and 132).

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Saunders whose telephone number is (571) 270-1063. The examiner can normally be reached on Monday - Thursday, 9:00 a.m. - 4:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JS  
February 12, 2008



**SINH TRAN**  
**SUPERVISORY PATENT EXAMINER**